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A STAGE IA CULTURAL RESOURCES SURVEY OF THE NSNJ/NL PROPERTY OLDMANS TOWNSHIP SALEM COUNTY, NEW JERSEY

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prepared for

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ABSTRACT

A Stage IA cultural resources survey was conducted by John Milner Associates, Inc. at the NSNJ/NL Property, located south of U.S. Route 130 near Pedricktown in Oldmans Township, Salem County, New Jersey. The property is located in a rural section of northern Salem County and includes freshwater tidal marshlands and numerous industrial buildings. The Stage IA investigation included a literature and historical map review to identify known or potential architectural, historical, and archeological resources as well as a pedestrian reconnaissance of the project area to identify potential cultural resources and to observe conditions that may have affected the presence and integrity of potential archeological resources. The study area appears to possess no historic architectural resources or historic archeological sensitivity. However, several areas on the property are identified as possessing high prehistoric archeological sensitivity. While no remedial activities are currently planed for areas identified as archeological sensitive, it is recommended that a Stage IB survey be conducted to document the presence or absence of potentially significant archeological resources prior to any ground-disturbing activities.

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1.0 INTRODUCTION

1.1 Purpose of the Project

John Milner Associates, Inc. (JMA) was retained to conduct a Stage IA cultural resources survey of the National Smelting of New Jersey, Inc./NL Industries, Inc. Property (NSNJ/NL Property) in connection with a remedial investigation/feasibility study (RI/FS) being conducted by O'Brien & Gere Engineers, Inc. for NL Industries, Inc. NL Industries, Inc. operated a secondary lead smelter on the property from 1972 through early 1982. The facility recycled automotive batteries. NL Industries, Inc. signed an Administrative Consent Order with the New Jersey Department of Environmental Protection (NJDEP) in May 1982 agreeing to undertake a variety of activities to address environmental conditions at the property, including soil removal. The facility was transferred to National Smelting of New Jersey, Inc. early in 1983, and was operated by that concern for approximately one year. National Smelting of New Jersey, Inc. filed for bankruptcy protection in March 1984. NL Industries, Inc. entered the property in June 1984 to pump landfill leachate and maintain landfill cover. In a 1986 Administrative Order on Consent with the EPA, NL Industries, Inc. agreed to conduct a RI/FS.

The cultural resources survey was conducted in compliance with legislation and implementing regulations requiring federal agencies (and/or their designees) to identify significant cultural resources (including historical architectural, and archeological sites) and to take into account the possible effects of federally funded, licensed, or approved activities on such resources. In accordance with

the U.S. Environmental Protection Agency's (EPA's) *CERCLA Compliance with Other Laws Manual: Part II*, the Stage IA cultural resources survey undertaken by JMA included a literature and historical map review to identify known or potential cultural resources in the study area and its vicinity; a pedestrian reconnaissance of the study area to determine conditions that may have affected the presence and/or integrity of cultural resources; and preparation of this report documenting the methods, results, conclusions, and recommendations of the background research and field investigations.

1.2 Location of the Study Area

The study area is a four-sided parcel of land located approximately 1,100 feet east of the Delaware River in Oldmans Township, Salem County, New Jersey. It is situated southeast of U.S. Route 130 about seven miles north of the Delaware Memorial Bridge. The study area has approximately 3,600 feet of frontage along Route 130, extends 4,400 feet southeast of Route 130 along Porcupine Road to Five Points, has frontage of 3,400 feet along Pennsgrove-Pedricktown Road, and extends 1,600 feet along Benjamin Green Road (Figure 1). The NSNJ/NL Property comprises approximately 42 acres of the study area. It is located north of the Pennsgrove-Pedricktown Road in the south-central portion of the study area (Figures 1 and 3).

1.3 Organization of Report

This report includes four sections of text following this introduction. Section 2.0 presents information concerning the environmental setting, prehistoric occupation, and history of the study area, as well as the results of previous cultural resources surveys in the vicinity of the study area. Section 3.0 describes

the methods and results of the field reconnaissance of the study area, and is followed by Section 4.0, which provides an assessment of cultural resources sensitivity. Finally, Section 5.0 presents a summary of the Stage IA investigations and presents recommendations. Figures and plates follow the list of references cited, and Appendix I, Project Personnel, completes the report.

2.0 BACKGROUND RESEARCH

This section of the report provides the results of the background research regarding the study area and its vicinity. The research was undertaken in order to gather and interpret existing data regarding the nature of historic and prehistoric occupation of the area, as well as the environmental attributes of previously recorded cultural resources. The research included an examination of a variety of sources, including historic site records and cultural resources survey reports, sources on local prehistory and history, and historic maps. Repositories consulted included the Office of New Jersey Heritage (ONJH), the New Jersey State Museum, and the New Jersey State Library. This section of the report is divided into four subsections, as follows: 1) environmental setting, 2) prehistoric overview, 3) contact/historic overview, and 4) previous cultural resources investigations.

2.1 Environmental Setting

The study area is located in the coastal portion of the Inner Coastal Plain Physiographic Region of New Jersey (Robichaud and Buell 1973). The Inner Coastal Plain is a broad, comparatively level to gently undulating plain, rising gradually from sea level and sloping in a southeasterly direction. All of Salem County is included in the Delaware River drainage area, discharging into the river and Delaware Bay through Oldmans Creek, Alloway Creek, and the Salem and Maurice Rivers.

The NSNJ/NL Property contains freshwater marshlands and drains into intermittent creeks which flow into the Delaware River. Study area soils are

classified as part of the Galestown-Sassafras-Berryland Association. These soils occur on low terraces along the Delaware River and are mostly sandy, contain loamy subsoil, are located on slopes ranging from zero to five percent, and are excessively- to poorly-drained (Powley 1969:3).

The NSNJ/NL Property was identified in 1969 as containing areas of freshwater marshes along tidal streams (although these streams are no longer tidal) and Sassafras-Galestown-Woodstown loamy sands. Native vegetation includes marsh plants, trees, and shrubs, and in higher areas wooded areas are present. High water tables and unstable soil materials limit development of these areas, although drainage and embankments allow reclamation of the marshlands for cultivation (Powley 1969:17). Sassafras-Galestown-Woodstown loamy sands are suited to vegetable and fruit cultivation, although the soils are droughty and subject to wind erosion (Powley 1969:29). Native vegetation primarily was characterized by woodlands which would have supported a variety of game.

2.2 Prehistoric Overview

The environmental features in the study area are primarily related to a riverine setting of secondary streams and drainages, periglacial freeze-thaw zones, and gravel and cobble deposits. Predictive archeological models indicate that in the prehistoric past these environmental settings provided excellent locations for cobble and pebble extraction, as well as hunting and fishing (Marshall 1982). Three major cultural periods have been defined for the prehistoric occupation of New Jersey: the Paleo-Indian, Archaic, and Woodland Periods. These periods span a temporal range of more than 13,000 years, and are characterized by particular artifact assemblages and settlement patterns.

The earliest occupation of New Jersey dates to the Paleo-Indian period (c. 12,000 B.C.-8,000 B.C.), at the close of the last Pleistocene glaciation. Paleo-Indians are characterized as hunters and gatherers who relied primarily on large mammals such as mastodon and caribou for subsistence. Fluted stone points are characteristic of Paleo-Indians, who were highly mobile since procurement of high grade lithic raw materials was essential to their subsistence strategy. Paleo-Indian settlements have been identified in a variety of ecological settings, including high-order stream floodplains and terraces (Marshall 1982). Quarry-related areas and base camps represent the predominant types of Paleo-Indian sites. Most high quality lithic materials in New Jersey are located in the northern, eastern, and southern sections of the state, where most of the Paleo-Indian sites have been identified. Over 200 fluted points have been recovered in New Jersey, almost all surface finds, including 12 fluted points recovered from Salem County (Marshall 1982). Mastodon remains have been identified in the central and northern sections of Salem County, and have also been recovered from the northeastern and central parts of the state and from the continental shelf of the Atlantic Ocean (Kraft 1974).

With a warmer and dryer climate and increased seasonal variability, Archaic cultures gradually supplanted the Paleo-Indians. Archaic Period sites date from c. 8,000 B.C. to 1,000 B.C., and include a wide range of stemmed and notched projectile points. Archaic peoples appear to have been more sedentary than their predecessors, and more dependent on plant foods. Their sites were occupied on a seasonal basis by mobile groups and were related to their proximity to specialized resources (Kraft and Mounier 1982a). However, the size of their procurement territories seems to have been limited by an overall increase in

population. Late Archaic sites, dating from c. 3,000 B.C. to 1,000 B.C, are common in New Jersey, and are characterized by milling stones, pestles, stone axes and adzes, and soapstone (steatite) vessels (Kraft and Mounier 1982a).

Archaic sites are especially common in southern New Jersey, and "great quantities of Archaic artifacts survive in largely unstudied and unreported private collections" (Kraft and Mounier 1982a:72). Recorded Archaic period sites range from large villages to small hunting and fishing camps located near water and food resources; however, "Archaic remains occasionally occur as scattered or isolated finds, often with little or no apparent relationship to present watercourses or other resources" (Kraft and Mounier 1982a:75).

Climatic conditions during the Woodland period (c. 1,000 B.C.- A.D. 1600) closely resembled those of the modern period, and the successful domestication of cultivated plants became an essential component of the Woodland subsistence strategy. Characteristics of the Woodland period include elaborate ceramic, shell, stone, and copper industries, the use of the bow and arrow, complex religious and funerary practices, and the establishment of base camps and palisaded villages along rivers and major tributaries (Kraft 1974; Williams and Thomas 1982). The use of ceramic vessels to store food greatly increased the potential for population expansion, and increased sedentism further reduced exploitation territories.

In southern New Jersey, evidence from the Maurice River drainage area indicates that Late Woodland (c. A.D. 1000 - 1600) sites tend to be clustered along estuarine and riverine systems and form a graded series ranging from very

substantial habitations along the main tributaries to smaller campsites at the river mouths and their headwaters. However, Kraft and Mounier (1982b) note that very large sites are present well upstream in the headwaters of major creeks and along coastal shorelines, probably due to the diversity in resource distribution within the riverine ecological setting.

2.3 *Contact/Historic Overview*

The period in which European colonists and the indigenous peoples of New Jersey came into contact is generally confined to the sixteenth and seventeenth centuries, and terminates with the end of recognizable Native American societies (Williams and Kardas 1982). At the time of contact southern New Jersey was inhabited by a Delaware-speaking group which called themselves the Lenape and spoke a dialect called Southern Unami (Goddard 1978). As Europeans colonized New Jersey, the Native American groups were displaced westward, dwindling in number through a combination of disease, warfare, and the loss of former exploitation areas, particularly those associated with the waterways of the region.

Initial European settlement in southern New Jersey took place along the Delaware River, where the Dutch and Swedish competed for control of the local fur trade. In 1626 Cornelius Mey, an explorer for the Dutch West India Company, established the first settlement along the Delaware River at Timber Creek, in modern Gloucester City (Cushing and Sheppard 1883; Everts and Stewart 1876). The Dutch later established Fort Nassau, which remained active until 1651, a period during which the Dutch and Swedish actively traded in the region, but established few other permanent settlements. The English also

claimed sovereignty over southern New Jersey, based on a claim dating to 1497, when John and Sebastian Cabot made the first survey of the Atlantic coast of North America. In 1664, the Dutch surrendered New Netherlands to King Charles II of England, who granted all lands between the St. Lawrence and Delaware Rivers to his brother James, Duke of York. The Duke of York then granted the lands between the Hudson and Delaware Rivers to Lord John Berkeley and Sir George Carteret. In 1674, Berkeley sold his share to two Quakers, Edward Byllynge and John Fenwick, who, with their new partner Carteret, agreed to partition the land grant into East and West Jersey in 1676 (Pomfret 1973). Fenwick arrived in the New World in 1675, sailing up the Salem River about three miles to a point on the south side of the river where he established Salem City (Cushing and Sheppard 1883). Meaning "peace," Salem was the first English town settled on the east side of the Delaware River, and was incorporated in 1695 (Salem County Historical Society 1964).

The early Euro-American settlement pattern of Salem County was almost totally concentrated on higher, oak-timbered areas, as most of the county was comprised of tidal meadows and freshwater swamps into the late eighteenth century. The meadows and marshes were drained and artificial channels constructed to use the land for cultivation as early as the Dutch and Swedish occupation in the seventeenth century. In 1778, the State Legislature enacted a law authorizing owners of swamp and marshlands to form corporations for the purpose of banking and draining their lands (Cushing and Sheppard 1883). Farming became the major factor in the development of the county from the period of earliest European occupation, and remained the dominant economic activity of Salem County through the first half of the twentieth century (Schmidt 1973). The

urban centers at Philadelphia and New York served as the primary markets for the produce from Salem County, which also included goods manufactured in furnaces, gristmills, sawmills, forges, and manufactories located throughout the county. Lumber, wood, clover, and herd grass-seed were also primary exports, particularly to the New England region (Everts and Stewart 1876). During the nineteenth century the prevailing industry in Salem County was glass-making, which took advantage of the numerous sand beds scattered throughout the region.

Oldmans Township was predominantly a rural area throughout the nineteenth century, consisting of farms and grist mills located along the tributaries of Oldman's Creek and other tributaries of the Delaware River. Originally part of Upper Penn's Neck Township (purchased by William Penn in 1682 and incorporated in 1798), Oldmans Township was incorporated in 1881, the last township created in Salem County (Salem County Historical Society 1964). Primarily comprised of farms that produced cereal grains and corn, Oldmans Township also contained a shell-marl bed, which was extensively exploited as a fertilizer for grasses and grains (Everts and Stewart 1876).

Pedricktown remains the largest village in the township and is named for Roger Pedrick, an early English colonist who came to Salem County in 1662. The village is situated along the western shore of Oldman's Creek, and is the town closest to the study area. Located in the center of a rich agricultural region during the nineteenth century, one of its primary products was castor bean oil, which was used as a cathartic (purgative medicine) or lubricant (Everts and Stewart 1876). Pedricktown also exported dairy and garden products, and

included a large flour mill (Cushing and Sheppard 1883). From a single store in 1838, Pedricktown grew to encompass more than 100 domestic residences, several stores and shops, a school and hall, two cemeteries, and two churches by the late nineteenth century (Cushing and Sheppard 1883; Salem County Historical Society 1964).

Historic occupation in the immediate vicinity of the study area was established early in the nineteenth century, and by 1876 over a dozen residences were located within the boundaries of the study area, including one farmstead belonging to A. Pedrick, a descendent of Roger Pedrick (Figure 2). A proposed railroad line traversing the study area is also depicted on the 1876 map; owned by the Delaware Shore Railroad Company the rail line was constructed between 1876 and 1883 and connected lower Salem County with Penn's Grove in Upper Penn's Neck Township.

The 1876 map also shows four streams traversing the study area feeding a tributary of the Delaware River (Figure 2). By 1939 Corps of Engineers activity had reduced these creeks to intermittent streams, and between 1955 and 1962 over 6.4 million cubic yards of dredged material was deposited north of Route 130 (Historic Sites Research, Inc. 1982a). The Corps maintains a drainage channel to the Delaware River through which the study area streams drain (Figure 1).

Figure 2 also indicates that a G. Hoople resided on the NSNJ/NL Property in 1876. The property was largely in agricultural use (Powley 1969) prior to NL Industries's construction of a secondary lead smelter on the property in 1971-72.

The facility was transferred to National Smelting of New Jersey, Inc. early in 1983, who operated it for approximately one year. The surrounding study area also contains other areas of industrial development, including a machine shop, a facility that makes pallets, a B.F. Goodrich factory, and a gas products company. Many of these complexes are depicted in Figure 1.

2.4 Previous Cultural Resources Investigations

No systematic cultural resources investigations have been previously conducted of the study area or its immediate vicinity. In addition, no historic sites survey has been prepared for Oldmans Township. However, previous archeological investigations in the greater vicinity of the study area (within a radius of approximately two miles) provides an indication of the types of resources which may be present in the study area.

Numerous prehistoric archeological sites have been identified in the vicinity of the study area, particularly along Oldmans Creek to the southeast. Spier (1915) identified nine campsites and 15 scattered finds along Beaver Creek and Oldmans Creek southeast of Pedricktown, but found nothing west of the railroad tracks that traverse the study area. Materials recovered included numerous projectile points made of jasper, quartz, flint, and argillite; potsherds displaying corn-cob and chevron imprints; and pestles, grooved axes, and hammerstones. These sites were located more than a mile southeast of Five Points, which represents the southeast corner of the study area.

Also located south and southeast of the study area are several sites described by Cross (1941). Most of the recorded sites were surface finds in cultivated fields

that included steatite bowl fragments, numerous potsherds, and worked flakes and stone chips. These sites were located more than 2,000 feet south and southeast of the study area.

Cross (1941) also reported two sites located northwest of the study area. The first was located in a cultivated field and included surface finds of stone chips; the second was located in a grassy field northwest of Route 130 and also included stone chips and pottery fragments. These sites were located between 500 and 1,000 feet southwest of Oldmans Creek and were surrounded by tidal marshes.

Additionally, Skinner and Schrabisch (1913) found evidence of prehistoric burials north of Route 130, approximately 2,600 feet north of the study area. Designated 28SA45 and 28SA46, these were recorded as follows: "Mr. Acton has reported a series of five burial places extending from Bridgeport to Oldman's Point along the Delaware River" (Skinner and Schrabisch 1913:59). No further information about these sites was identified.

The most recent archeological survey in the vicinity of the study area was performed in 1982 at a proposed dredge disposal area northeast of the study area (Historic Sites Research, Inc. 1982a). This project area was bordered on the north and east by Oldmans Creek and on the south by Route 130. Limited testing yielded lithic debitage and fragments of eighteenth and nineteenth century ceramics. It was concluded that field testing had uncovered the remaining portion of 28SA46, reported in 1913 by Skinner and Schrabisch. The other site reported in 1913 was found to be buried beneath deep dredge fill and either destroyed or inaccessible (Historic Sites Research 1982b). Additional

testing at 28SA46 yielded nearly 300 prehistoric artifacts, the majority of which were lithic waste flakes (Historic Sites Research 1982b:19). Points and prehistoric ceramic fragments recovered at the site suggested occupation during the Late Archaic to Middle Woodland Periods (3,500 B.C. to A.D. 1400), while historic ceramic sherds indicated human activity from the late eighteenth century through the modern period, and included a large component of middle to late nineteenth century wares. Since the site had been subject to disturbance during the construction of dikes, neither the prehistoric nor historic artifacts were found *in situ*, and no further archeological recovery efforts were recommended (Historic Sites Research 1982b:28).

In summary, previous archeological research in the vicinity of the NSNJ/NL Property has demonstrated that prehistoric occupation was concentrated in northern Salem County around high ground above swampy areas, extending at least from the late Archaic to the Middle Woodland Periods. European activity during the contact and historic periods began as early as the middle seventeenth century, although most evidence of past human habitation is related to the farmsteads located in the region during the middle to late nineteenth century. Most of the land in the vicinity of the study area has undergone considerable disturbance through agriculture, construction and industrial activities, and much of the area has been filled by dredge material.

3.0 PEDESTRIAN RECONNAISSANCE

A pedestrian reconnaissance of the NSNJ/NL Property was conducted during a site visit on April 2, 1992. This section of the report provides a description of the methods and results of that reconnaissance.

3.1 Methods

During the site visit, the senior author of this report was accompanied by Mr. Stephen W. Holt of NL Industries, Inc. and Ms. Ruth A. Hartcorn of O'Brien & Gere Engineers, Inc. The pedestrian reconnaissance included an examination of the existing conditions at the NSNJ/NL Property and documentation of its terrain and man-made alterations. General conditions in the surrounding study area were also observed via vehicular/pedestrian reconnaissance. The reconnaissance sought to identify potential architectural, historic, and archeological resources. In addition, conditions affecting the presence and integrity of potential archeological resources were noted. Exposed ground surfaces were examined for evidence of archeological deposits. Significant characteristics observed during the survey were noted and photographed (Plates 1-9).

3.2 Results

The NSNJ/NL Property is dominated by the now-dormant lead smelting plant (Plates 1 and 2). Much of the plant site was formerly agricultural (Powley 1969), and the farm complex indicated on the 1876 map (Figure 2) stood on the road frontage of the parcel.

The western portion of the property includes apparently undisturbed wetland areas, and an unnamed stream flows through this part of the parcel (Figures 1 and 3; Plate 3). In addition, the eastern edge of the property within approximately 1,000 feet north of the Pennsgrove-Pedricktown Road appears to be relatively undisturbed as well (Figure 3; Plate 4). This area contains some wetlands, although some better-drained soils are also present, especially closer to the road (Figure 3).

There is a marsh in the center of the parcel (Figures 1 and 3). Both the parcel and the marsh are bisected by the tracks of the Pennsylvania-Reading Seashore Line (Plate 5). North of the railroad tracks is a closed landfill which contains soils previously removed from the plant site (Plate 6). Adjacent to the landfill to the east-southeast stands a wooded area (Plate 7). This area is better drained, although it is adjacent to the marsh and wetland soils are present to the north (Figure 3).

It is anticipated that some remedial activities will take place outside the NSNJ/NL Property in certain areas within the surrounding study area. Most of the study area has been developed for industrial uses or consists of wetlands, although some land remains in agricultural and residential use (Figure 1). Proposed remedial work is proposed along the western stream both north and south of the NSNJ/NL Property and along a portion of a stream to the east of the property (Figure 3). These streams appear to have been subject to channelization and dredging in the past since their courses include sharp 90 degree turns (Figure 3). Evidence of recent stream maintenance activity is also present both north and south of the NSNJ/NL Property (Plates 8 and 9).

Visibility of exposed ground surfaces varied from excellent in areas of previous ground disturbance to poor in wooded areas where leaf-litter and undergrowth obscured the ground. No artifacts or other evidence of archeological resources were observed in the course of the reconnaissance.

No evidence of the historic sites indicated on the 1876 map (Figure 2) were identified within the study area. All of these sites appear to have been replaced by manufacturing concerns and modern structures. However, several structures along the south side of Pennsgrove-Pedricktown Road appear to be potential historic sites. The proposed remedial activity will have no effect on these potential resources.

In summary, most of the NSNJ/NL Property has been disturbed or is wetland. Two areas are identified as relatively undisturbed and well-drained, important considerations in the evaluation of archeological sensitivity. Areas to be affected by proposed remedial activities in the larger study area outside of the NSNJ/NL Property include streams located in wetlands. These streams appear to have been previously channelized and dredged.

4.0 ASSESSMENT OF CULTURAL RESOURCES SENSITIVITY

The vicinity of the study area has a long history of human occupation, and most likely the study area and the NSNJ/NL Property, has been subject to repeated human use and modification of various kinds over time. This section of the report assesses the cultural resources sensitivity, of the study area based on the documentary and field data collected in the course of the investigation.

Based on the survey results their appears to be no potential for significant historic architectural resources within the study area. However, several portions of the NSNJ/NL Property appear to possess archeological sensitivity. Archeological sensitivity, as used herein, is a general indicator of the potential for the occurrence of archeological resources which may be eligible for listing on the National Register of Historic Places. The interpretations presented below are based primarily on prior experience in this part of New Jersey and the surrounding region and the documented behaviors of prehistoric and historic peoples. Historic and prehistoric archeological resources are each addressed. Areas of archeological sensitivity are illustrated in Figure 3.

As noted above, most of the NSNJ/NL Property has been disturbed or is wetland. These areas, and the areas to be affected by proposed remedial activities outside the NSNJ/NL Property proper, possess very low archeological potential due to their low-lying wet and disturbed conditions.

Two areas are identified as relatively undisturbed and well-drained. These areas appear to have been subject to only moderate disturbance associated with

farm activities. While soils in these areas were plowed in the past, undisturbed archeological deposits may be present below the plowzone.

While the study area contains no previously reported archeological sites, it is documented that prehistoric peoples made extensive use of the surrounding area, especially in the Archaic through Middle Woodland periods. Inland waterways, swamps, and headwaters are locations rich in potential plant and animal food resources, and were highly attractive to native peoples. The study area also includes wetlands. The margins of these wetlands would have been attractive to Native Americans for short-term campsites and perhaps for food procurement and processing. Accordingly, areas adjacent to wetlands that are both relatively undisturbed and well-drained are considered to possess high prehistoric archeological potential. These areas are illustrated on Figure 3.

5.0 SUMMARY AND RECOMMENDATIONS

5.1 Summary

The NSNJ/NL Property was the subject of a Stage IA cultural resources survey. The investigation included a literature and historical map review to identify known or potential historic, architectural, or archeological resources and a pedestrian reconnaissance of the property and portions of the surrounding study area to observe conditions that may have affected the presence and/or integrity of cultural resources. Based on the data collected there appear to be no potential historic architectural resources in the study area. Further, wetlands and disturbed areas on the property possess very low archeological potential. Two areas on the property are well-drained and relatively undisturbed, and thus possess high prehistoric archeological potential (Figure 3). However, based on currently available information, there are no plans to conduct ground disturbing remedial activities in these areas. In addition, a farm complex, which apparently dates from at least 1876, formerly stood on the property. However, disturbance associated with the construction of the lead smelting facility appears to have eliminated any historic architectural resources and historic archeological potential of this complex. Additionally, areas outside the property which will be affected by proposed remedial activities possess very low archeological potential due to poor drainage and previous disturbance.

5.2 Recommendations

The majority of the NSNJ/NL Property consists of areas of poor drainage and prior disturbance and thus possess low archeological sensitivity. In these areas of low sensitivity no further archeological investigation is warranted. There are

no current plans to conduct ground disturbing remedial activities in the areas identified as archeologically sensitive. Accordingly, no Stage IB survey is recommended at this time.

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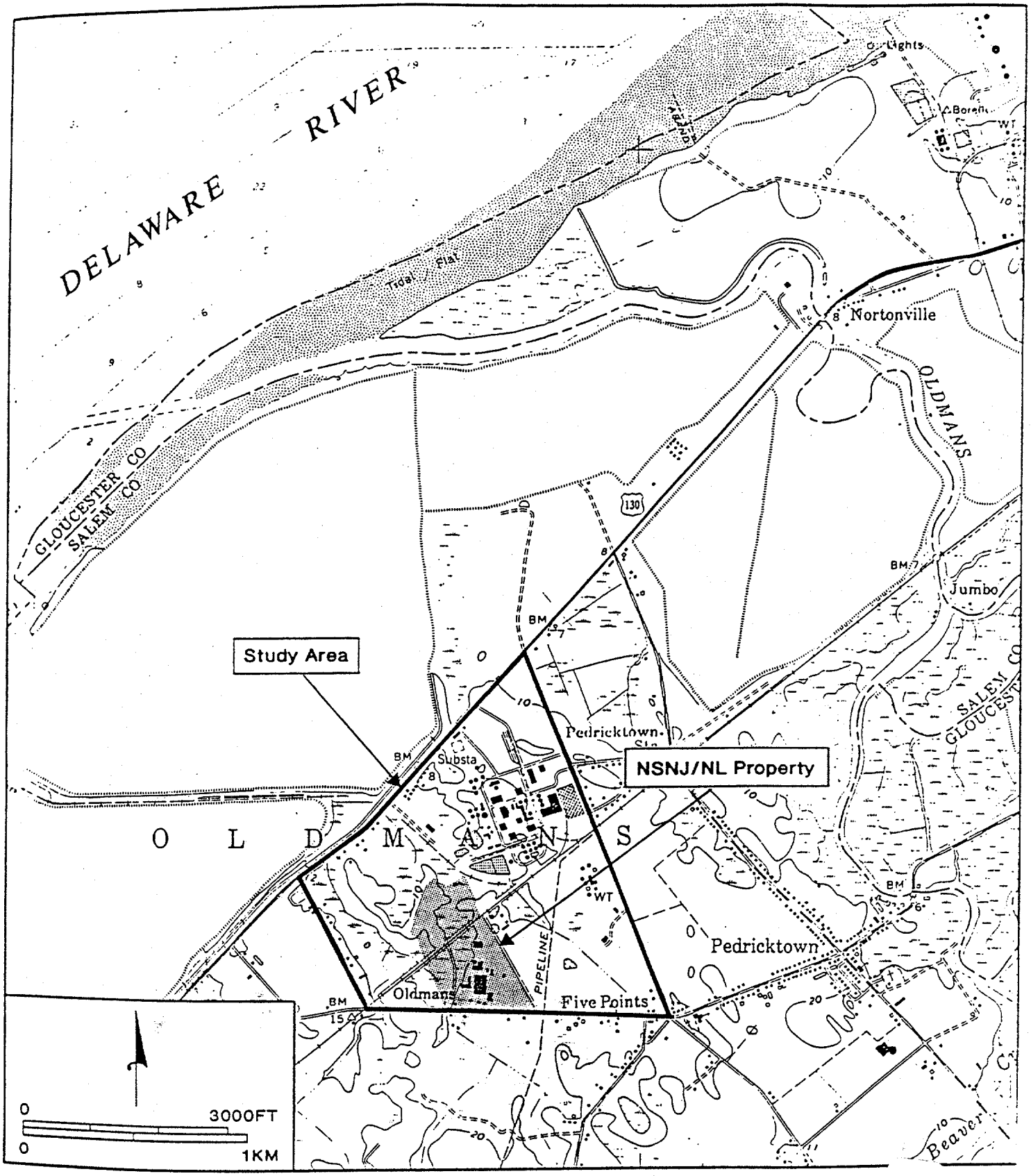
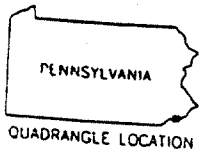
FIGURES



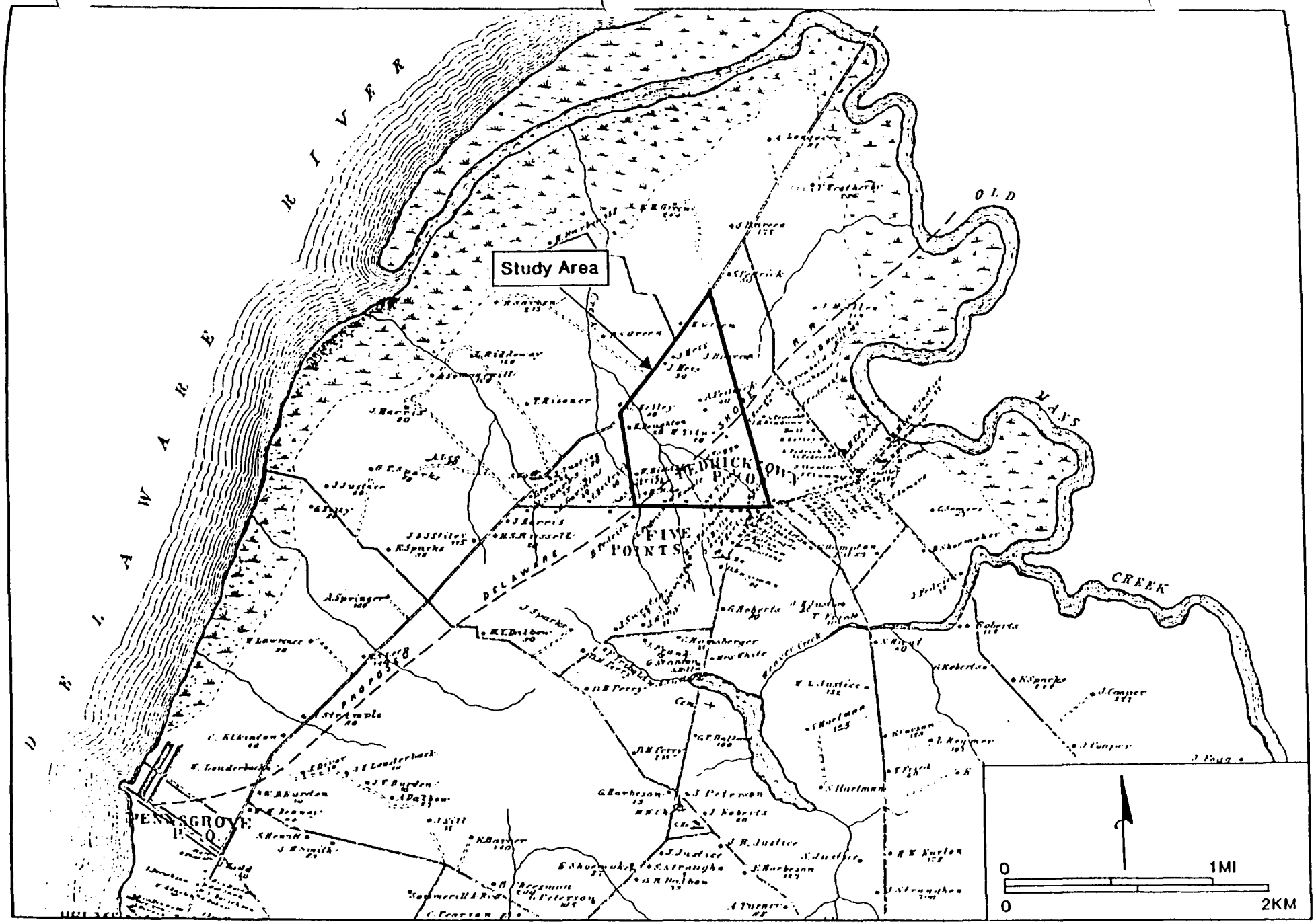


QUADRANGLE LOCATION

Study Area Location (Detail of *Marcus Hook, PA-NJ-DEL 7.5 Minute Quadrangle*, USGS 1967, Photorevised 1986)

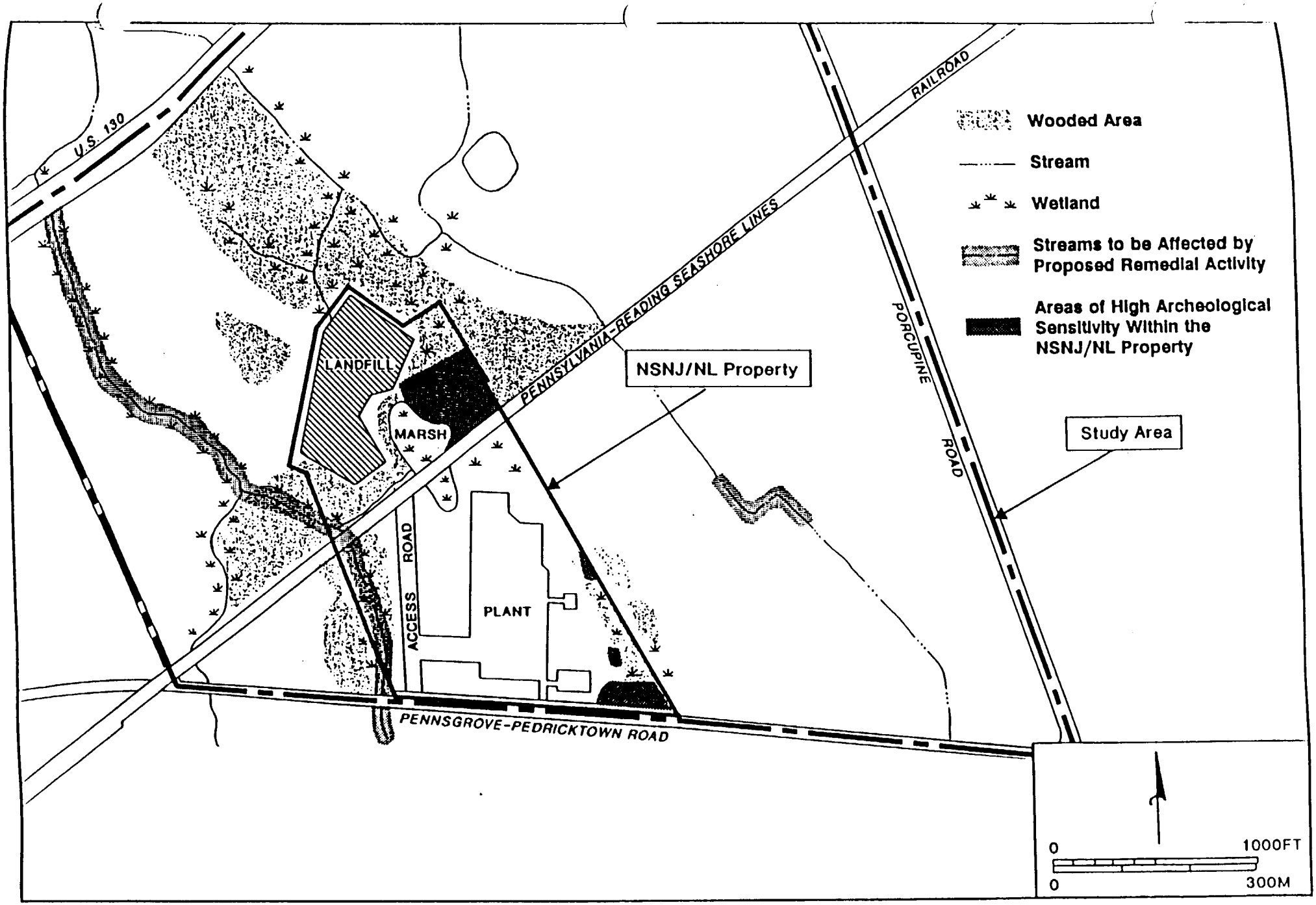
NLI 002 0251

Figure



Detail, *Combination Atlas Map of Salem and Gloucester Counties* (Everts and Stewart 1876)

Figure 2



Plan of the NSNJ/NL Property

Figure 3

PLATES

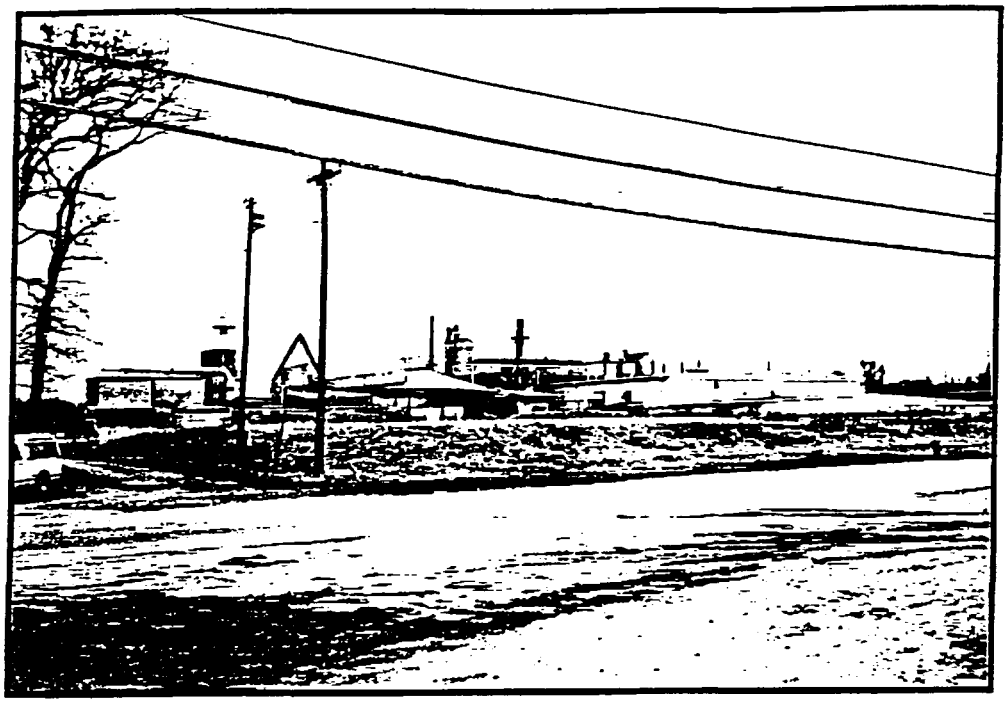


Plate 1. Lead Smelting Plant, Facing Northeast. Note Pedricktown-Pennsgrove Road in the Foreground.

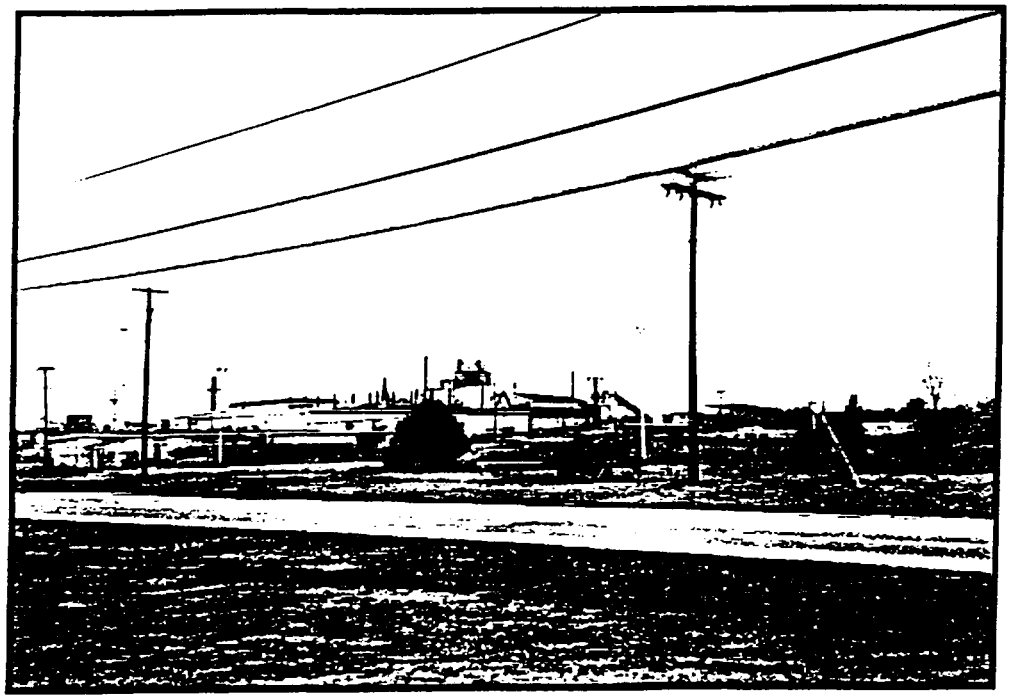


Plate 2. Lead Smelting Plant, Facing Northwest. Note Pedricktown-Pennsgrove Road in the Foreground.

Plate 3. Unnamed Stream Flowing North through a Wetland Area in the Western Portion of the NSNJ/NL Property, Facing South.

Plate 4. Undisturbed Area Along Eastern Edge of the NSNJ/NL Property, Facing South.

Plate 5. Railroad Tracks Crossing the Center of the NSNJ/NL Property North of the Lead Smelting Plant, Facing East-Northeast. Note Wetland in the Middle Distance and Better-drained Wooded Area in Distance.

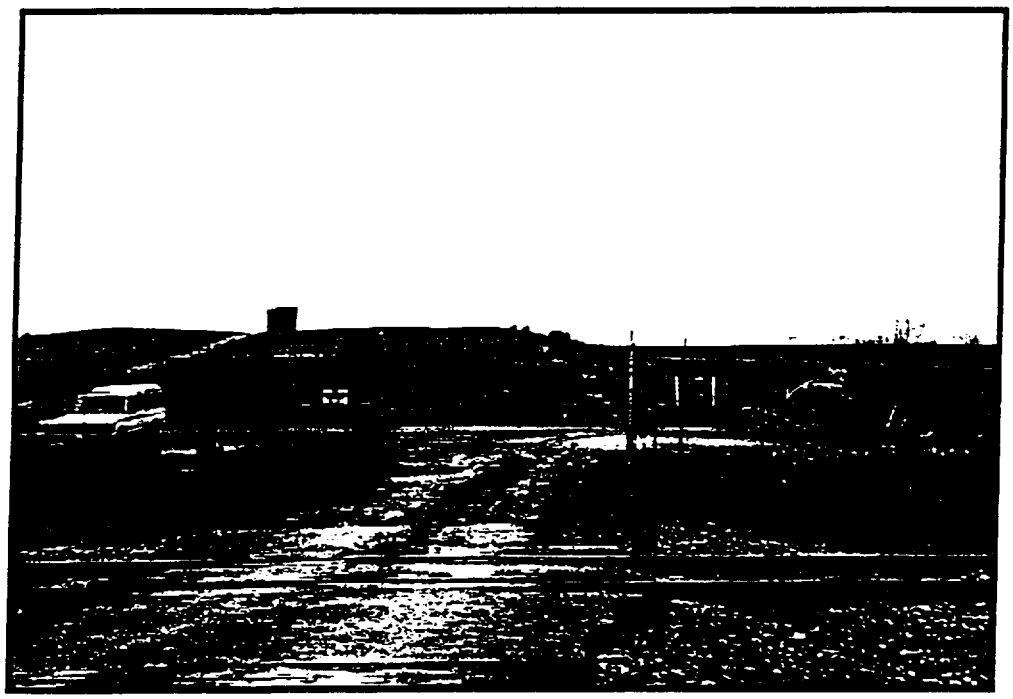


Plate 6. Landfill in Northwestern Portion of the NSNJ/NL Property, Facing North.

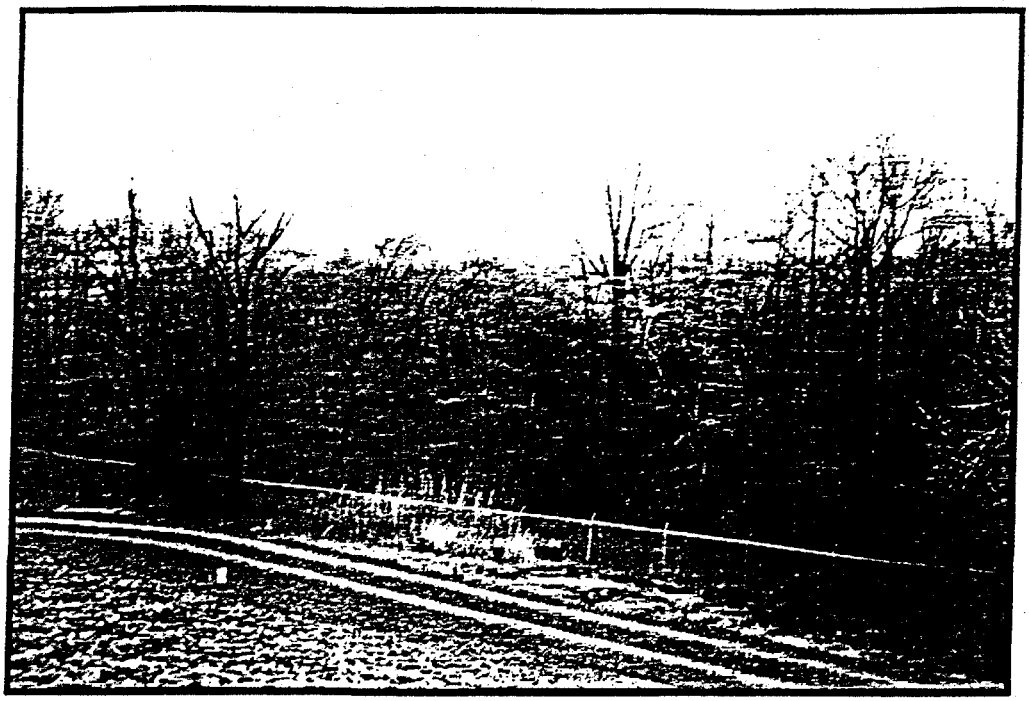


Plate 7. Undisturbed Wooded Area Adjacent to the Landfill, from the Landfill, Facing East-Southeast.

Plate 8. Unnamed Stream to the West and North of the NSNJ/NL Property, Facing South. Note Dredge Spoil Next to Channelized Stream.

Plate 9. Unnamed Stream immediately South of the NSNJ/NL Property, Facing South. Note Dredging Disturbance.

APPENDIX I: PROJECT PERSONNEL

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John P. McCarthy, Project Manger/Principal Archeologist: project management, Phase IA field investigations, data analysis, and report preparation. Over 17 years experience in cultural resources management and archeology. M.A. in Anthropology. Author or co-author of over 60 cultural resources reports and publications. Certified by the Society of Professional Archeologists.

Thomas A. J. Crist, Project Archeologist: background research, data analysis, and report preparation. Over five years experience in cultural resources management, archeology, and osteology. M.A. in Anthropology. Author or co-author of over 15 cultural resources reports and publications. Certified by the Society of Professional Archeologists.